

ABSTRACT OF THE DISCLOSURE

The invention includes chemical vapor deposition methods, including atomic layer deposition, and valve assemblies for use with a reactive precursor in semiconductor processing. In one implementation, a chemical vapor deposition method includes positioning a semiconductor substrate within a chemical vapor deposition chamber. A first deposition precursor is fed to a remote plasma generation chamber positioned upstream of the deposition chamber, and a plasma is generated therefrom within the remote chamber and effective to form a first active deposition precursor species. The first species is flowed to the deposition chamber. During the flowing, flow of at least some of the first species is diverted from entering the deposition chamber while feeding and maintaining plasma generation of the first deposition precursor within the remote chamber. At some point, diverting is ceased while feeding and maintaining plasma generation of the first deposition precursor within the remote chamber. Other aspects and implementations are contemplated.